WHAT IS CLAIMED IS:

1. A scannable mirror arrangement comprising:

a substrate having an elongate channel therein, the channel having first and second ends;

an optical fiber having a first end abutting the first end of the channel in said substrate;

a rod disposed in the channel of said substrate and moveable longitudinally therein, said rod having a mirror surface on one end thereof facing the first end of said optical fiber;

an optical fluid filling said channel,

whereby the fluid-filled channel provides an optical waveguide; and

a motor for moving said rod longitudinally in the channel of said substrate,

whereby the distance light travels in the optical waveguide between the first end of said optical fiber and the mirror end of said rod changes in response to said motor moving said rod.

2. The scannable mirror of claim 1 wherein said substrate includes a base having the channel in a surface thereof and a cover attached to the surface of said base having the channel therein.

3. The scannable mirror of claim 1 wherein the channel in said substrate comprises a main channel in which said rod is disposed, and a second channel providing a passage between first and second ends of the main channel, whereby said optical fluid may flow in the second channel between the first and second ends of the main channel as said rod moves therein.

4. The scannable mirror of claim 1 wherein said substrate includes an optical glass having an index of refraction, and wherein said optical fluid has an index of refraction greater than the index of refraction of the optical glass.

5. The scannable mirror of claim 1 wherein said substrate includes an optical glass, and wherein said optical fluid includes a silicone fluid and/or benzene.

6. The scannable mirror of claim 1 wherein the channel has a cross-sectional shape and size and wherein said rod has a different cross-sectional shape and/or a different cross-sectional size.

7. The scannable mirror of claim 6 wherein the cross-sectional shape of said channel is one of rectangular, trapezoidal and circular, and wherein the cross-sectional shape of said rod is circular.

8. The scannable mirror of claim 1 wherein said optical fiber has a cross-sectional shape and size and wherein the channel has about the same cross-sectional shape and size.

9. The scannable mirror of claim 1 wherein the channel of said substrate has a counterbore at the first end thereon and wherein said optical fiber is disposed in the counterbore of the channel.

10. The scannable mirror of claim 1 wherein said motor further includes a stepping motor, a linear motor, a translating motor, an electromagnetic motor and/or an electrostatic motor.

11. The scannable mirror of claim 10 wherein said motor includes a magnet moveable longitudinally adjacent the channel of said substrate, and wherein said rod is magnetic and/or ferromagnetic.

12. The scannable mirror of claim 10 wherein said motor includes a plurality of electrodes spaced apart on said substrate along the channel therein, and wherein said rod is dielectric and includes a plurality of spaced apart electrodes thereon.

13. The scannable mirror of claim 12 wherein the plurality of electrodes on said substrate are spaced apart at a pitch greater than that of the plurality of electrodes on said rod.

14. The scannable mirror of claim 1 wherein said optical fiber is a multimode optical fiber and wherein the fluid-filled channel of said substrate provides a multimode optical waveguide.

15. A scannable mirror arrangement comprising:

an optical fiber having an end abutting an optical waveguide;

a mirror disposed in the optical waveguide and moveable therein toward and away from said optical fiber, wherein said mirror faces the abutting end of said optical fiber; and

motor means for moving said mirror in the optical waveguide toward and away from said optical fiber,

whereby the distance light travels in the optical waveguide between the end of said optical fiber and said mirror changes in response to moving said mirror.

16. The scannable mirror of claim 15 wherein the optical waveguide comprises a substrate having a channel in a surface thereof and a cover attached to the surface of said substrate having the channel therein, wherein the channel is filled with optical fluid.

17. The scannable mirror of claim 16 wherein the channel in said substrate comprises a main channel in which said mirror is disposed, and a second channel providing a passage between first and second ends of the main channel, whereby optical fluid may flow in the second channel between the first and second ends of the main channel as said mirror moves therein.

18. The scannable mirror of claim 16 wherein said substrate includes an optical glass having an index of refraction, and wherein the optical fluid has an index of refraction greater than the index of refraction of the optical glass.

19. The scannable mirror of claim 16 wherein said substrate includes an optical glass, and wherein said optical fluid includes a silicone fluid and/or benzene.

20. The scannable mirror of claim 16 wherein the channel of said substrate has a counterbore at the first end thereon and wherein said optical fiber is disposed in the counterbore of the channel.

21. The scannable mirror of claim 15 wherein the optical waveguide has a cross-sectional shape and size and wherein said mirror has a different cross-sectional shape and/or a different cross-sectional size.

22. The scannable mirror of claim 21 wherein the cross-sectional shape of said optical waveguide is one of rectangular, trapezoidal and circular, and wherein the cross-sectional shape of said mirror is circular.

23. The scannable mirror of claim 15 wherein said optical fiber has a cross-sectional shape and size and wherein said mirror has about the same cross-sectional shape and size.

24. The scannable mirror of claim 15 wherein said motor means includes a stepping motor, a linear motor, a translating motor, an electromagnetic motor and/or an electrostatic motor.

25. The scannable mirror of claim 15 wherein said motor means includes a magnet moveable along and adjacent the optical waveguide toward and away from the end of said optical fiber, and wherein said mirror includes a magnetic and/or ferromagnetic member.

26. The scannable mirror of claim 15 wherein said motor means includes a plurality of electrodes spaced apart along and proximate the optical waveguide, and wherein said mirror includes a dielectric member having a plurality of spaced apart electrodes thereon.

27. The scannable mirror of claim 26 wherein the plurality of electrodes on said substrate are spaced apart at a pitch greater than that of the plurality of electrodes on the dielectric member of said mirror.

28. The scannable mirror of claim 15 wherein said optical fiber is a multimode optical fiber and wherein the optical waveguide is a fluid-filled multimode optical waveguide.

29. A scannable mirror arrangement comprising:

an optical waveguide in a substrate adapted for receiving an optical fiber at a first end of the optical waveguide;

a mirror disposed in the optical waveguide facing the first end thereof and moveable therein toward and away from the first end thereof; and

a motor moving said mirror in the optical waveguide toward and away from the first end of said optical waveguide,

whereby the distance light travels in the optical waveguide between the first end thereof and said mirror changes in response to moving said mirror.

30. The scannable mirror arrangement of claim 29 wherein said optical waveguide is filled with an optical fluid, and/or wherein said motor is an electromagnetic and/or an electrostatic motor.